

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous claim listings and versions:

Claims 1-10. (Cancelled)

11. (Currently Amended) A fluorescent single- or multi-layer optical disc for storing information, the disc comprising at least one information layer, said at least one information layer comprising:

a transparent film substrate;

a fluorescent composition covering the transparent film substrate and comprising a fluorescent dye, a film-forming polymer, a plasticizer, a surfactant and a light stabilizer; and a primer layer placed between the substrate and the fluorescent composition;

wherein at least one of the substrate, the fluorescent composition and the primer layer comprises a material providing effective adhesion of the fluorescent composition to the substrate or the primer layer so as to prevent formation on an inter-layer boundary of non-fluorescent poly-molecular associates of fluorescent dyes causing quenching of fluorescence, and

wherein the dye is present in an amount of 0.1 weight percent to 10 weight percent of the ~~fluorescent composition~~ information layer and the plasticizer is present in an amount of 10 weight percent to 50 weight percent of the information layer.

12. (Previously Presented) The disc of claim 11, wherein the primer comprises a substance selected from the group consisting of liquid silica glass, polyvinyl alcohol, thermosetting resins, polyorganosiloxanes and latexes.

13. (Previously Presented) The disc of claim 11, wherein the substrate comprises a substance selected from the group consisting of polyvinyl chloride and its co-polymers.

14. (Previously Presented) The disc of claim 11, wherein the film-forming polymer comprises a substance selected from the group consisting of polyvinyl chloride and its co-polymers, chlorinated polyvinyl chloride and nitrocellulose.

15. (Previously Presented) The disc of claim 11, wherein the surfactant comprises a substance selected from the group consisting of butyl glycol, propylene glycol, dimethyl glycol and diethyl glycol.

16. (Previously Presented) The disc of claim 11, wherein the disc is a multi-layer disc having a plurality of said information layers.

17. (Currently Amended) A method of increasing a fluorescent signal level from a fluorescent single- or multi-layer optical disc for storing information, the disc comprising at least one information layer, said method comprising:

(a) forming said at least one information layer from:
a transparent film substrate;
a fluorescent composition covering the transparent film substrate and comprising a fluorescent dye, a film-forming polymer, a plasticizer, a surfactant and a light stabilizer; and
a primer layer placed between the substrate and the fluorescent composition;
wherein at least one of the substrate, the fluorescent composition and the primer layer comprises a material providing effective adhesion of the fluorescent composition to the substrate or the primer layer so as to prevent formation on an inter-layer boundary of non-fluorescent poly-molecular associates of fluorescent dyes causing quenching of fluorescence, and
~~wherein the dye is present in an amount of 0.1 weight percent to 10 weight percent of the fluorescent composition;~~ and

(b) heating said at least one information layer to a temperature sufficient to improve adhesion of the fluorescent composition to the substrate or primer layer,
wherein the dye is present in an amount of 0.1 weight percent to 10 weight percent of the information layer and the plasticizer is present in an amount of 10 weight percent to 50 weight percent of the information layer.

18. (Previously Presented) The method of claim 17, wherein step (a) comprises providing a plurality of said information layers such that the disc is a multi-layer disc.

19. (Previously Presented) The method of claim 17, wherein step (b) comprises heating said information layer to a temperature of 100°C to 120°C.

20. (Cancelled)

21. (Currently Amended) A fluorescent single- or multi-layer optical disc for storing information, the disc comprising at least one information layer, said at least one information layer comprising:

a transparent film substrate;

a fluorescent composition covering the transparent film substrate and comprising a fluorescent dye, a film-forming polymer, a plasticizer, a surfactant and a light stabilizer; and a primer layer placed between the substrate and the fluorescent composition;

wherein at least one of the substrate, the fluorescent composition and the primer layer comprises a material providing effective adhesion of the fluorescent composition to the substrate or the primer layer so as to prevent formation on an inter-layer boundary of non-fluorescent poly-molecular associates of fluorescent dyes causing quenching of fluorescence, and

wherein the dye is present in an amount sufficient to provide a transmittance at a wavelength of maximum fluorescence absorption through the information layer of about 92% to about 96%.

22. (Previously Presented) The disc of claim 21, wherein the primer comprises a substance selected from the group consisting of liquid silica glass, polyvinyl alcohol, thermosetting resins, polyorganosiloxanes and latexes.

23. (Previously Presented) The disc of claim 21, wherein the transmittance is 92.3% to about 96%.

24. (Previously Presented) The disc of claim 21, wherein the transmittance is greater than 92.3% to about 96%.